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An argument for taping pattern drills without pauses is advanced as a means for allowing students to learn at their own rate. Insertion of pauses by the teacher and advantages of a foot pedal to control pauses are discussed. Examples are provided for two, three, four, and five cycle drills. (AF)

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The Case for Tapes Without Pauses

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IN A RECENT article I argued that whenever a student practices with taped pattern drills, he should have a tape-recorder which allows him to lengthen the pauses by means of a pause lever operated by hand or, preferably, by foot.[1] The pause lever provides for the implementation of the fourth principle of programed learning, namely, that each student should have the opportunity to learn at his own rate. The speed with which learners of a foreign language are able to react verbally to spoken stimuli varies considerably and, indeed, changes in the process of learning. An experiment with native speakers of English demonstrated that even in the mother tongue the speed of response varied as much as ten seconds. In this experimental drill, the subjects were requested to formulate a question according to a cued word in the sentence "Paul gave Jane the book." After hearing the sentence, the subject was cued with "Paul," and was to reply with "Who gave Jane the book?" When cued with "Jane" or "book," he was to say "To whom did Paul give the book?" or "What did Paul give Jane?," respectively. After having practiced with three frames, the subjects' response time improved with subsequent frames, but still continued to vary from individual to individual according to factors which, I suspect, have their roots in hearing ability, fatigue, concentration, and just plain motivation and intelligence.

This experiment demonstrated that the response time for each individual varies and that it varies even within the same exercise. Most important, it became evident that the rate of variation is not exclusively caused by learning a new language but that it occurs in the speaker's native language. When learning a new language the factors that determine response time are necessarily compounded.

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Time as Cause for Non-Performance

According to the theory of programed learning, the student must perform in order to learn. When the student is not given the opportunity to perform because of lack of time, as in the case of tapes in which the correct response is said by the tape before the student has had the time to begin or complete his response, we are violating the very principle of "performance at every step" upon which the entire theory of learning through practice is based. Inevitably the student will be frustrated. He has not been given a fair chance to do what he was asked to do, and this in turn will vitiate his opportunity to be "reinforced" and "rewarded" for correct performance. Moreover, when the new stimulus is heard immediately after the correct responses, as in the case of three-cycle drills, the student's frustration is multiplied to the point where he is ready to give up completely and, if he could, kick the machine. In three-cycle drills the student has hardly any time to listen to and absorb the correct response before the new stimulus for the next frame is upon him. Consequently, the new stimulus falls on deaf ears, and as a result he is unable to perform on the next frame. Small wonder that bedlam ensues with half-muttered and unfinished responses. The *Teacher's Manual* for *A-LM* states that "the silent space provided for the student to work in is just long enough for him to make the utterance required at the same pace as the model, and no longer. The purpose of the drills is not to give the student time to 'figure it out' or even think briefly about what he is saying, but to develop correct speech habits—automatic, unthinking, correct response to a native speaker's stimulus—just like his English speech habits. It is only upon such a near-native set of habits that the higher near-native linguistic and literary skills can be built into the higher levels of the course."[2]

While I agree with the principle of habit-forming exercises to attain "unthinking" per-

[1] G. Mathieu, "The Pause Lever: Key to Self-Pacing," *The German Quarterly*, Vol. XXXV, No. 3, May, 1962, pp. 318–321.

[2] *Teacher's Manual, A-LM, Level One.* New York: Harcourt, Brace and World, 1961, p. 32.

formance in the automatic selection of sounds and structures (but not vocabulary), the blunt truth is that in practice it does not work. As pointed out above, even the native speaker does "figure out" whether to say "to whom" or "what did he give." And it is precisely in this area of selecting how to say what one has decided to say that student abilities vary as to the time needed to make the decision. To be sure, the *A-LM Manual* suggests that "If the students hesitate or make many errors, the teacher stops the machine drill, gives the appropriate instruction and practice, and then returns to the machine drill. This procedure is kept up until a majority of students attain optimum performance." I believe that there should be no dichotomy between practice for learning as provided by the teacher and by machine drill; I would therefore reverse the procedure and suggest that "the teacher stops the tape after each stimulus in order to give the student the time necessary to give the response, and releases the tape after the response has been given. He then rewinds to the beginning of the drill again and again until such time as the majority of students are able to perform in the pause provided." It is a self-evident truth that optimum performance can only be attained if the necessary time is provided to perform in the learning phase. Apparently field experience with the three-cycle drills did not produce the desired results, for the tapes to *A-LM Level II* were changed into five-cycle drills in which the learner is given a pause for echoing the correct response and again hears the correct response after his own imitation. The "sandwich" system of enclosing the student's echo between two correct responses thus combines the advantages of the three and four cycle drills: the learner has the chance to imitate the correct response, to correct himself, and to be left with the acoustic impression of the model utterance, rather than his own, for the next frame.

The following diagram illustrates the three types of drills and the spots at which the teacher or student should activate the pause lever. The example is a transformation drill singular to plural in a synthetic language:

Three-Cycle Drill

1		2	3		1
Takka	↑	(Pause)	Takka	↑	Takka
li	|		lis	|	li
pupa	A		puppum	B	jig

Four-Cycle Drill

1		2	3		4	1
Takka	↑	(Pause)	Takka	↑	(Pause)	Takka
li	|		lis	|		li
pupa	A		puppum	B		jig

Five-Cycle Drill

1		2	3		4	5	1	
Takka	↑	(Pause)	Takka	↑	(Pause)	Takka	Takka	↑
li	|		lis	|		lis	li	|
pupa	A		puppum	B		puppum	jig	A

In all three drills 1) represents the stimulus said by the tape, 2) the recorded pause in which the student attempts to give the correct response, 3) the correct response said by the tape for correction or reinforcement, 4) the recorded pause for the student to echo the correct response he has just heard, and 5) the correct response again by the tape. In order to provide for the optimum learning situation, the teacher should activate the pause lever by hand or by foot at "A", after the stimulus, to *lengthen* the pause, and should hold it until the students have had the chance to say the response; at "B" the teacher should activate the pause lever to *insert* a pause in a Three-Cycle Drill to provide time for the students to echo the correct response and, in a Five-Cycle Drill, to *lengthen* the pause for the same purpose. A further refinement in the learning effectiveness consists in calling on an individual student for the creative phase after the initial stimulus (1) and on the group to echo the correct response after (3). Needless to say, the teacher would rewind the tape immediately or repractice the drill on subsequent days until the students are able to perform in the allotted pause. But it is only the use of the pause lever in the learning phase that will eventually bring about the desired performance within the recorded pause. However, one disadvantage still remains: by lengthening the pauses at "A" or "B" the teacher-created pause will be followed by the pre-recorded pause causing considerable "dead air." This can be shortened by the teacher if, instead of holding the pause lever until the students have said the response, he merely holds it until they have *started* to say the response. The additional time will usually provide the right pause without too much "dead air." The student needs the time primarily at the onset of his response—he needs time to get started, but once launched, he may be able to carry through. This will, of course, depend upon the type of drill and whether the grammatical change the student is to make occurs in the beginning, middle, or end of the frame. Nevertheless, in the choice between non-performance due to the lack of time and "dead air" due to a teacher-created pause, the latter would seem preferable in the total learning process. Nevertheless, for the ideal solution we must look to the tapes without pauses.

Advantages of Pauseless Tapes

In a pauseless drill the stimulus and response (Cycles 1 and 3) are recorded without any pause for either imitation or responding but with just enough silent space—I call it a "hiatus"—for the teacher or the student to catch the end of the simulus or correct response. Once a drill is recorded as a two-cycle exercise without pauses, it can be transformed into either a three- or four-cycle drill by means of the pause lever:

Two-Cycle Drill Without Pauses

1		2		1		2		1		2
Takka	↑	Takka	↑	Takka	↑	Takka	↑	Takka	↑	Takka
li		lis		li		lis		li		lis
pupa		puppum		jig		jiggum		tado		taddum
	A		B		A		B		A	

The teacher is now in full control: he can insert a pause at "A" to allow time for performance and he can insert a pause after "B" to allow time for echoing. If the students should be performing accurately, he need not allow time for echoing at "B", by letting the tape move on or by stopping it only long enough to let the correct response "sink in" without echoing before hearing the new stimulus. The same procedures are available to the student working alone in the "library" mode, in the lab or at home with a tape-recorder. When listen-and-echo exercises, such as dialogs, are recorded without pauses, the same flexibility prevails. A dialog can then be used for either listening practice during the initial presentation or in subsequent "warm-up"

practice, or by activating the pause lever, for imitation practice. A pauseless dialog can also serve for dictation: the teacher plays the tape and stops it at intervals to allow for writing.

The chief objection to the pauseless tape might be that the student can no longer record his voice on the lower track for playback and self-evaluation. However, I would agree with Professor George Borglum that play-back by the beginning student is largely a waste of time unless it is done in a speech clinic situation with a teacher who diagnoses the errors of the individual and prescribes remedial exercises.[3]

By Hand or by Foot?

For the most efficient and effective use of the pauseless tape I would suggest the foot-activated pause lever. It has many advantages over the hand-activated one. The foot control leaves the teacher's hands free to conduct the class by hand signals for echoing or responding, for individual or choral performance. It also allows the tape to be locked at the spot where the teacher stopped it: he can then leave the machine and walk to the student who needs special attention. Lastly, it appears that our reaction time in stopping the tape is quicker by foot than by hand, perhaps due to the better presence of mind in our toes evolved from long practice driving automobiles. . . .

For the student working in the library mode, the foot control leaves his hand free to write when working with programed materials that combine sound and sight. Moreover, the student, compelled to listen attentively to the stimulus or correct response in order to stop the tape at the right moment, becomes engaged in a self-tutorial activity which challenges his continuous attention. The same holds true for the teacher using the foot control when engaging in machine drill with his class: he, too, must listen closely, adapting the pace to the needs of the group. And by being forced to listen to each stimulus and response, he undergoes a most intensive listening experience (instead of just a hearing experience) which should improve his own fluency. These, then, are some of the reasons for looking toward the day when all taped materials will be recorded without pauses. I am convinced that they will come about, if not for pedagogic reasons then because they cost just half as much as tapes with pauses.

[3] George Borglum, "Consign the Mistake to Oblivion," *Bay State FL Bulletin*, published by Department of Modern Languages, University of Massachusetts, Amherst, Vol. 4, No. 2, January, 1959.